

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figures 1 and 2. These sheets replace the original sheets including Figures 1 and 2.

Attachment: Replacement Sheets 1 to 2.

REMARKS

This paper is being presented in response to an official action dated November 3, 2006.

Entry of the amendments to the claims, specification, and drawings, reconsideration of the rejected claims, and allowance of all pending claims 1-10 are respectfully requested in view of the following remarks.

Drawings

The drawings were objected to under 37 C.F.R. § 1.83(a) on the basis that the “at least one functional layer in addition to the fireproof layer and the transparent TiO₂ layer” in claim 4 must be shown. Corrected drawing sheets in compliance with 37 C.F.R. § 1.121(d) are submitted herewith. The objection can be withdrawn.

Specification

A substitute specification was requested, and one is submitted herewith.

The 35 U.S.C. § 112, ¶ 2, Rejection is Moot

Claim 1 has been rejected under 35 U.S.C. § 112, ¶ 2, as lacking antecedent basis. See p. 3-4 of the action. Claim 1 has been amended to recite “...a transparent TiO₂ layer that reduces incidence of UV radiation onto the fireproof layer ...” The rejection is moot and can be withdrawn.

The 35 U.S.C. § 103(a) Rejections are Traversed

Claims 1-10 have been rejected under 35 U.S.C. § 103(a) as being obvious over Bolten et al. U.S. Patent No. 5,496,640 in view of Finley U.S. Patent Application Publication No. 2002/0045073 A1. See pp. 4-10 of the action. A response to the obviousness rejection is set forth below.

Proper Basis for a § 103(a) Rejection

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings of a plurality of references. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim elements. The teaching or suggestion to

make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on the applicants' own disclosure. In re Vaeck, 20 USPQ2d 1438 (Fed. Cir. 1991); see also M.P.E.P. § 2143.

The Patent Office bears the burden of establishing a *prima facie* case of obviousness and “can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). To support a conclusion that a claimed combination is obvious, either (a) the references must expressly or impliedly suggest the claimed combination to one of ordinary skill in the art, or (b) the Patent Office must present a convincing line of reasoning as to why a person of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). It is “incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.” Ex parte Levy, 17 USPQ2d 1461, 1462 (Bd. Pat. App. & Inter. 1990) (citing Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick, 221 USPQ 481, 485 (Fed. Cir. 1984)).

No *Prima Facie* Case of Obviousness Has Been Made and, therefore, the § 103(a) Rejection is Traversed

As described below, there is no objective motivation in the prior art for combining the Bolten et al. and Finley references, and specifically there is no objective motivation in the prior art for combining the Bolten et al. and Finley references in the manner asserted in the official action to arrive at the claimed invention. Thus, the asserted *prima facie* case of obviousness is traversed. Accordingly, reconsideration and withdrawal of the § 103(a) rejections are respectfully requested.

The Finley patent publication is directed to photoactive coatings. The purpose and function of the photoactive coating is to make self-cleaning windows or anti-fogging windows. See ¶¶ [0003] to [0007]. The coating, “upon exposure to certain electromagnetic radiation, such as UV, interacts with organic contaminants on the coating surface to degrade or decompose the organic contaminants.” See ¶¶ [0006] and [0041].

The Finley patent publication lacks in any teaching for using the titanium dioxide coating to reduce incident UV radiation. Even if Finley teaches that UV light may be

used to activate photocatalytic properties, photoactive hydrophilicity, or both, nothing in Finley seems to indicate that UV light is reflected, absorbed, or otherwise reduced by the titanium dioxide layer disclosed therein. There are neither measurements of the absorption rate of the titanium dioxide layer in the UV region nor measurements of the amount of transmitted radiation through the titanium dioxide layer in the UV region.

Significantly, Finley teaches that if reflection or absorption of UV radiation is desired, then a separate, optional functional coating 38 should be used: “[l]ikewise, the functional coating 38 may be a solar control coating, for example, a visible, infrared or ultraviolet energy reflecting or absorbing coating.” Quoted from ¶ [0031], ten lines up from the bottom of page 3.

Even if the titanium dioxide layer of Finley does inherently reduce incident UV light, an obviousness rejection cannot be based on an unknown inherent property of a prior art reference. “That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is not known.” *In re Spormann*, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966).

Furthermore, specific absorption and reflection properties are recited in the dependent claims. Compare claims 8-10 (e.g., “wherein the TiO₂ layer displays an absorption between 3% and 15% within the wavelength spectrum from 320 nm to 480 nm” and “wherein the TiO₂ layer displays a reflection of at least 40% within the wavelength spectrum from 320 nm to 480 nm”). The rejections as to claims 8-10 generically state that it would be obvious to provide the fireproof glazing unit with desired characteristics, and that the characteristics of a titanium oxide [sic] layer vary with thickness. However, the particular “desired characteristics” are not found in the prior art.

It appears that the examiner is alleging that the particular absorption and reflection parameters claimed are result-effective variables that it is obvious to optimize. However, the prior art cited does not suggest that the absorption and reflective parameters are result-effective. When the prior art fails to suggest the result-effective variable, limitations defining the result-effect variable are distinguishing limitations. Under U.S. patent law, a *prima facie* case of obviousness cannot be based on an argument that the claimed invention was obvious to try. *See In re Yates*, 211 USPQ 1149, 1151, 663 F.2d 1054, 1057 (CCPA 1981) (prima facie case of obviousness was not established by the PTO on patent concerning a process for oxidizing an olefin to an unsaturated aldehyde, since examiner merely suggested

a reason why it might have been obvious to try varying a number of parameters); *In re Antonie*, 195 USPQ 6, 9, 559 F.2d 618, 620 (CCPA 1977) (patent application for rotating biological contactor apparatus held not obvious, merely obvious to try, because inventor varied every parameter of a system in order to optimize the effectiveness of the system without guidance from the prior art as to which parameters to vary or how to vary them).

Assuming, *arguendo*, that it is known by a person of ordinary skill in the art that certain fireproof materials are susceptible to environmental influences and specifically to UV light, and even if it therefore may become obvious to prevent a fireproof layer from absorbing large amounts of UV radiation, the use of a titanium dioxide layer for reducing incident UV light on a fireproof layer is not obvious because the person of ordinary skill in the art would not find any teaching to do so. The person of ordinary skill in the art would therefore likely use one of the numerous UV-protective layers already described in the art rather than a titanium dioxide layer as claimed herein.

Furthermore, the Finley patent does not contain a fireproof layer. The official action repeatedly states that Finley includes a fireproof layer. See, for example, the last paragraph on page 4: “Finley teaches a transparent TiO₂ layer (32, Fig. 1) that reduces the incidence of UV radiation onto the fireproof layer on at least one side of said fireproof layer” (emphasis added). The official action fails to point out where in Finley the fireproof layer is disclosed, and none is evident.

It is “incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.” *Ex parte Levy*, 17 USPQ2d 1461, 1462 (Bd. Pat. App. & Inter. 1990) (citing *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984)). Accordingly, it is respectfully submitted that if the rejection is maintained and an alleged fireproof layer is pointed out in Finley, then the rejection cannot be made final. See 37 C.F.R. § 1.104(a)(2), “[t]he reasons for any adverse action or any objection or requirement will be stated and such information or references will be given as may be useful in aiding the applicant . . . to judge the propriety of continuing the prosecution.” See also MPEP § 707 Completeness and Clarity of Examiner’s Action.

The teaching of Finley is directed to the TiO₂ layer itself, and the substrate is irrelevant: “[t]he substrate 22 . . . may be of any desired material having any desired characteristics.” See ¶ [0023]. There is no suggestion of its use in fireproof glazing units.

Instead, when specific substrates are described the general thrust of its teaching is for use in common windows which require cleaning, such as architectural windows, automotive windows, and aircraft windows. See ¶¶ [0005] and [0023].

Accordingly, as Finley is directed to photoactive coatings, and not fireproof glazing units, there is no objective motivation in the prior art for combining the TiO₂ layer of Finley with the teachings of Bolten at al. For this reason, the claimed invention is not *prima facie* obvious, and the rejections can be withdrawn. Accordingly, reconsideration and withdrawal of the rejections are requested.

CONCLUSION

In the absence of more pertinent prior art, withdrawal of the rejections and allowance of all pending claims are respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is urged to telephone the undersigned attorney at the indicated number.

Respectfully submitted,

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